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(54) **COMBINED IN-PLANE SHEAR AND MULTI-AXIAL TENSION OR COMPRESSION TESTING APPARATUS**

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(58) Field of Search **73/813-848, 788-800, 73/760, 159, 160**

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(57) **ABSTRACT**

An in-plane shear and multi-axial tension or compression testing apparatus having four-bar linkages pivotable to two sleeves on an opposite vertices with the sleeves of each vertex rotationally attached to each other. Lateral links of each linkage are pivotally attached to load transfer plates in which the plates secure a test specimen. Each linkage is rotatable to the other linkages while the vertices are subjected to a compression or tensile load. The vertices are also capable of rotation by a testing machine for shear testing. During compression or tension of the vertices of the apparatus, the plates respectfully move toward or away from each other thereby applying compression or tension to the specimen. The bars of one linkage can be rotated with respect to the other, thereby applying torsional loading to the specimen.

20 Claims, 10 Drawing Sheets

